The New York Times printed an article this month entitled, “Why Bilinguals are Smarter”. This short piece reviews some of the mounting evidence that knowing more than one language has deep cognitive benefits that, on the surface, seem to have little to do with language. Infants and children who are fluent in two languages have been shown to outperform monolinguals (who speak only one language) on a number of tasks that measure executive functioning, or the ability to focus attention, keep important information in mind, and ignore or inhibit stimuli or thoughts that aren’t relevant to the task at hand. These findings are hotly discussed within psychology, and are some of the most exciting findings to come out of developmental psychology within recent years.

The article gives the example a task in which children must first sort shapes on the basis of color, then must switch to sorting by shape. This type of task is very difficult for preschoolers, as it requires them to ignore the strong association they’ve just taught themselves, for example, between the color blue and the pile on the left. The higher ability of bilingual children to succeed on this type of task is not just a nice party trick: success on tasks just like this is predictive of children’s academic success and their likelihood to have behavioral problems in school. Indeed, preschool programs that emphasize executive functioning have had success at improving school outcomes for at-risk children. Having good executive functioning abilities may be especially important for young children, as it sets them on a path to success in the early school years, but these skills vary widely amongst adults as well, and these differences affect our ability to focus, to multitask, and to problem solve. The research so far suggests that on average, bilinguals of every age outperform their peers on executive functioning tasks. Indeed, these benefits even appeared to help older bilinguals stave off dementia or Alzheimer’s disease in old age.

These findings are fascinating because they’re unexpected: while there are obvious benefits of speaking multiple languages, the idea that knowing two languages affects your ability to think in nonverbal contexts is not immediately intuitive. They’re also exciting because executive functioning skills are so important, and this research suggests a concrete way to improve them. The research has reached the point where it makes sense to recommend that parents with the option raise their children bilingual.

From my perspective as a developmental psychologist, it seems that these two aspects of the findings (their unintuitive nature and their applicability) are overshadowed by a more general principle that this research has shown: that experience can have large, meaningful effects on executive functioning ability. Exploring how speaking two languages can improve these skills is likely to lead to a much better understanding of how they develop, and how they can be supported in all children.

One thing that makes developmental psychology fascinating is the question of how much our experience affects the way our minds develop. The fact that bilingual children (who have different language input than monolinguals) are better at executive functioning tasks suggests rather than having some pre-determined level of ability to attend, reason, and plan, a persons’s specific life experiences play an important role in determining our ability in these areas: in other words, these studies show that executive functioning ability is plastic.[[1]](#footnote-1) While many cognitive abilities are plastic in the sense that performance on a specific task can be improved with extensive practice, the effects of training in the laboratory often does not generalize past the task a person is trained on. What makes this research so exciting is that it suggests that bilingualism improves a vast range of executive functioning abilities, outside of the specific task (switching between languages or accessing words) that the “training” appears to have consisted of.

The next step, now that it’s been established that bilinguals have better EF skills on average, is to figure out why. As the article mentions, it is commonly believed among researchers that the benefits result from the practice that bilinguals get at selecting relevant information (the correct language) and ignoring irrelevant information (the ‘interfering’ language), and/or in monitoring the environment for contextual cues to figure out the language abilities and preferences of their speaking partners. Right now, though, most of this is speculation.

There are important and exciting studies that are probably underway that will help disentangle which aspects of bilingualism are helpful for learning languages. I’ve heard speculation that people who live in entirely bilingual communities (such as parts of Miami) might not show the bilingual advantage, since they can assume that their speaking partners speak both languages, and can speak a mixture of the two instead of carefully monitoring their listeners and inhibiting the language they’re not using. Showing that there are cases where bilingualism does not affect EF would help narrow down which characteristics of bilingualism are responsible for the effect. Another way to test these specific hypotheses about what bilingualism is doing is to attempt to replicate the effect in a different group that is not bilingual, but might be exposed to the same mechanism. For example, it would be telling to see if people who speak one language but who spend time in two different cultures show similar effects. If it’s true that monitoring the environment is the kind of practice that matters, perhaps people raised in societies with very firm class boundaries (where appropriate behavior depends a lot on who is around) would show similar benefits.

In the next few years, researchers will be testing these hypotheses, and the results will do more than simply sate our curiosity about why bilingualism affects EF. will allow us to extend these findings far beyond the case of bilingualism. If we know what kinds of thinking are good practice for building executive function, we can make these benefits available to children and adults who don’t have the resources available to learn a second language. We can also make realistic predictions about whether 2nd language exposure is useful for children. At this point, scientists have uncovered a phenomenon: bilinguals perform better on specific tasks. But they have not yet worked out the mechanism for this difference. Understanding the mechanism will allow us to understand the general principles that govern executive functioning, and allow us to generalize to a variety of other situations.

1. Ideally, to really nail down that this is about experience, we would want to see a study where children were randomly assigned to learn one language or two. Without that, we can’t rule out the possibility that children whose parents expose them to two languages are different for some other reason (for example, perhaps their parents have high executive functioning abilities that allowed them to learn more languages themselves). In this case, such explanations seem a bit unlikely, since different groups of bilinguals have very different reasons for being bilingual, and very different cultures and values. The fact that these executive functioning effects have been found across different pairs of languages helps support the idea that some aspect of the bilingual experience leads to differences in outcomes. [↑](#footnote-ref-1)